

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims

1-14. (Cancelled)

15. (New) A radar unit, comprising:

an antenna;

an arbitrary waveform generator (AWG) issuing an arbitrary (periodic) radar waveform signal at a given pulse repetition frequency (PRF), the AWG unit being adapted for adjusting the phase of the radar waveform signal as a function of a phase adjustment signal;

a transmit amplifier (TX) coupled to the antenna;

a receive unit (RX) coupled to the antenna;

a 2D filter for generating associate values of radar response and coordinate data;

a noise prediction means coupled to the receiver for receiving at least one prevalent radio frequency interference (RFI);

a demodulation and decoding bank comprising known information on the modulation and coding principle of the prevalent RFI signal, the RFI signal typically operating according to a predetermined refresh frequency at which redundant information is repeated (50Hz);

said noise prediction means operative to receive, demodulate and decode the information content of the at least one RFI signal, wherein:

the arbitrary wave generator is adapted for generating pulse-compressed chirps, whereby,

the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another,

whereby the overall radar pulses vary from pulse to pulse such that for the coinciding frequency of the at least one RFI signal, the time between radar pulses is an integer divisor of the periodicity of the at least one RFI signal.

16. (New) The radar unit according to claim 15, wherein the overall pulse composed of the first and second segment is formed so in relation to a previous radar pulse, that the frequency range is the same as the frequency range of the previous pulse and the duration of the overall pulse is the same as the duration of the previous pulse.

17. (New) The radar unit according to claim 15, wherein radar pulses constitute linearly frequency modulated (FM) segments of differing time / frequency rates.

18. (New) The radar unit according to claim 15, wherein the frequency spectrum is divided into a plurality of sub-channels, each sub-channel corresponding to a regulatory radio channel used for one radio or television information source, the radar unit comprising a noise prediction means for each RFI sub-channel overlapping with the radar range.

19. (New) The radar unit according to claim 18, wherein the overall pulse is formed so that the composite transmit radar pulses varies from pulse to pulse such that for the coinciding frequency of each RFI signal, the time between radar pulses is an integer divisor of the periodicity of each corresponding RFI signal.

20. (New) The radar unit according to claim 15, wherein radar pulses constitute linearly frequency modulated (FM) segments.

21. (New) The radar unit according to claim 20, wherein the radar pulses are temporarily disjunct.

22. (New) A method of adapting pulses transmitted from a radar unit, comprising the steps of:

receiving and demodulating at least one prevalent RFI signal;

sensing the periodicity of a component of the at least one prevalent RFI signal having a given RFI frequency coinciding with a frequency of the radar pulses;

wherein an arbitrary wave generator generates pulse-compressed chirps, wherein the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another,

whereby the overall radar pulses vary from pulse to pulse such that for the coinciding frequency of the at least one RFI signal, the time between radar pulses is an integer divisor of the periodicity of the at least one RFI signal.

23. (New) The method according to claim 22, wherein the overall pulse composed of the first and second segment is formed so in relation to a previous radar pulse, that the frequency range is the same as the frequency range of the previous pulse and the duration of the overall pulse is the same as the duration of the previous pulse.

24. (New) The method according to claim 22, wherein radar pulses constitute linearly frequency modulated (FM) segments of differing time / frequency rates.

25. (New) The method according to claim 22, wherein the frequency spectrum is divided into a plurality of sub-channels, each sub-channel corresponding to a regulatory radio channel used for one radio or television information source, the radar unit comprising a noise prediction means for each RFI sub-channel overlapping with the radar range.

26. (New) The method according to claim 22, wherein the overall pulse is formed so that the composite transmit radar pulses varies from pulse to pulse such that for the coinciding frequency of each RFI signal, the time between radar pulses is an integer divisor of the periodicity of each corresponding RFI signal.

27. (New) The method according to claim 22, wherein radar pulses constitute linearly frequency modulated (FM) segments.
28. (New) The method according to claim 22, wherein the periodicity of the RFI signal corresponds to the frame periodicity or line periodicity of a television signal.

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